We claim:

1. A stroke-multiplying shape memory alloy (SMA) actuator comprising at least three rigid parallel elongate members, each having a long axis and being slidable relative to one another parallel to that long axis, each connected one to another by an SMA wire such that the stroke of the actuator is substantially equal to the sum of the strokes of the SMA wires, where at least a central portion of the SMA wires are in close proximity to a heat sink.

2. The actuator of claim 1 where the elongate members are parallel plates.

3. The actuator of claim 2 where the elongate members are stacked parallel conductive plates electrically insulated one from another.

4. The actuator of claim 3 where each two plates are separated by a layer of polymeric material.

5. The actuator of claim 4 where the plates comprise a top plate, a bottom plate, and at least one intermediate plate, each plate having first and second ends and the first ends of all plates being aligned generally one above another and the second ends of all plates being aligned generally one above another, a first SMA wire having a first end connecting adjacent the first end of the bottom plate and a second end connecting adjacent the second end of the intermediate plate immediately thereabove, a second SMA wire having a first end connecting adjacent the first end of an intermediate plate immediately below the top plate and a second end connecting adjacent the second end of the top plate, and, if there is more than one intermediate plate present, an SMA wire having a first end connecting adjacent the first end of each intermediate plate and a second end adjacent the second end of the intermediate plate immediately thereabove.

6. The actuator of claim 1 where the distance between the central portion of each SMA wire and the heat sink is not more than 10 times a diameter of the wire.

7. The actuator of claim 6 where the distance between the central portion of each SMA wire and the heat sink is not more than 8 times the diameter of the wire.

8. The actuator of claim 7 where the distance between the central portion of each SMA wire and the heat sink is between 1 and 4 times the diameter of the wire.

9. The actuator of claim 1 where at least the central 20% of each SMA wire is in close proximity to the heat sink.

10. The actuator of claim 9 where at least the central 40% of each SMA wire is in close proximity to the heat sink.

11. The actuator of claim 10 where at least the central 70% of each SMA wire is in close proximity to the heat sink.

12. The actuator of claim 1 where at least the end 1 mm of each end of each SMA wire is not in close proximity to the heat sink.

13. The actuator of claim 11 where at least the end 1.5 mm of each end of each SMA wire is not in close proximity to the heat sink.

14. The actuator of claim 1 where the heat sink comprises the rigid members of the actuator.

15. The actuator of claim 4 where the heat sink comprises the parallel conductive plates of the actuator.

16. The actuator of claim 15 where each plate has an edge parallel to the long axis nearest an SMA wire attached to the plate adjacent an end of the plate, the edge being such that at least the central 60% of each wire is in close proximity to the edge and having a recess therein adjacent a point of attachment of the wire to the plate so that the wire is not in close proximity to the edge for at least the first 1 mm of the wire from the point of attachment to the plate.

17. The actuator of claim 1 where the heat sink is external to the actuator.

18. The actuator of claim 17 where the heat sink is an active cooling element

19. The actuator of claim 1 having a desired contraction limit and a power supply circuit supplying power to the actuator to cause it to contract, the power supply circuit comprising a switch that is normally closed when the actuator is contracted to less than the desired contraction limit and is opened by the actuator reaching the desired contraction limit.

20. An SMA actuator having a desired contraction limit and a power supply circuit supplying power to the actuator to cause it to contract, the power supply circuit comprising a switch that is normally closed when the actuator is contracted to less than the desired contraction limit and is opened by the actuator reaching the desired contraction limit.